

In the Claims:

Please amend the claims as follows:

1-13 (cancelled)

14. (new) A method for transmitting signals in a circuit board, the method comprising:
forming at least one optical channel, to which an optical signal is input by means of an optical transmitter and the optical signal input to the optical channel is received with at least one optical receiver;
designing the optical channel in such a manner that at least two focal points are formed in it;
placing the optical transmitter substantially in connection with one focal point; and
placing the optical receiver substantially in connection with a second focal point.

15. (new) The method according to claim 14, further comprising:
designing the optical channel substantially in the form of an ellipse.

16. (new) The method according to claim 14, further comprising:
designing the optical channel is designed substantially in the form of two opposite parabolas, wherein the opening directions of the parabola forms are directed towards each other.

17. (new) The method according to claim 14, further comprising:

designing the optical channel by forming at least two ellipse forms in such a manner that each ellipse form has one shared focal point, wherein the second focal point of each ellipse form is separate from other focal points.

18. (new) The method according to the claim 14, further comprising:

forming at least one mid-layer in the circuit board; and

placing the optical channel in the mid-layer of the circuit board.

19. (new) A circuit board, comprising:

at least one optical channel comprising at least two focal points;

at least one optical transmitter in an optical connection with the optical channel; and

at least one optical receiver in an optical connection with the optical channel;

wherein the optical transmitter is placed substantially in connection with one focal point,

and

the optical receiver is placed substantially in connection with one other focal point.

20. (new) The circuit board according to claim 19, wherein the optical channel is substantially in the form of an ellipse.

21. (new) The circuit board according to claim 19, wherein the optical channel is substantially in the form of two opposite parabolas, each parabola having an opening direction, and wherein the opening directions of the parabola forms are directed towards each other.

22. (new) The circuit board according to claim 19, wherein the optical channel comprises at least two ellipse forms in such a manner that each ellipse form has one shared focal point, wherein the second focal point of each ellipse form is separate from other focal points.

23. (new) The circuit board according to the claim 19, further comprising:
at least one mid-layer in the circuit board comprising said optical channel.

24. (new) The circuit board according to the claim 19, wherein the optical transmitter is a strongly diverging light emitting diode.

25. (new) The circuit board according to claim 24, wherein the optical transmitter is an RC-LED.

26. (new) The circuit board according to the claim 19, wherein the optical transmitter is placed in the optical channel at the location of the first focal point, and wherein the optical receiver is placed in the optical channel at the location of the second focal point.

27. (new) The circuit board according to the claim 19, wherein the optical transmitter is placed on the surface of the circuit board at the location of the first focal point, and wherein the optical channel comprises:

a first beam inverter in the first focal point to invert the signals directed from the optical transmitter to the first focal point substantially to the direction of the main level of the optical channel; and

a second beam inverter in the second focal point to invert the signals coming from the optical channel to the second focal point towards the optical receiver;

wherein the optical receiver is placed on the surface of the circuit board at the location of the second focal point.